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Sent: 10/31/2012 11:41:14 AM
To: Samantha Guidon/R3/USEPA/US@EPA
CC:
Subject: today's HF news from Region 6

----- Forwarded by Angela McFadden/R3/USEPA/US on 10/31/2012 11:40 AM -----

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Date: 10/31/2012 11:24 AM
Subject: hydraulic fracturing in the news - includes some law review articles

Thirst for groundwater caused fatal earthquake

18:00 21 October 2012 by Michael Slezak New Scientist

On 11 May 2011, nine people were killed and dozens injured by a magnitude 5.1 earthquake near Lorca in southern Spain. Now it seems that the earthquake was triggered by human activity. What's more, it may have been shallower, and thus more destructive, than if it had happened following a slow, natural build-up of stress.

There could be a silver lining to the tragedy, though. It may provide seismologists with a rare insight into how an earthquake can be triggered, and so give fresh hope to people who try to forecast such events. It may even be possible to weaken the strength and scale of such quakes in future.

We know that small earthquakes have been triggered by human activities like fracking, but until now there had been little compelling evidence of human involvement in larger, fatal quakes.

The Lorca quake was unusually shallow, a point noted by Pablo González at the University of Western Ontario in Canada and his colleagues. They decided to investigate whether it might have been triggered by the removal of vast quantities of groundwater for irrigation. This has caused the Lorca water table to fall sharply. Since 1960, its level has dropped by 250 metres, and the land has subsided by around 15 centimetres per year.

Radar measurements

Using radar to measure ground deformation caused by the quake, González and colleagues modelled how much the land slipped and identified the point where the quake originated. They found it involved about 20 centimetres of slip and occurred 3 kilometres below the Earth's surface – a third as deep as would be expected for quakes of that magnitude.

The team then modelled the effect of this disappearance of groundwater on stress patterns in the crust. The stresses coincided to such a degree with the rupture pattern seen in the quake that extracting groundwater must have triggered the event, the researchers concluded.

González adds that the quake would have happened eventually, even if the water had been left in the ground. "This portion of the fault was tectonically loaded," he says González. As the load continued to build, it would eventually rupture.

Even so, the quake might not have happened the way it did if the groundwater had been left untapped, says Jean-Philippe Avouac from California Institute of Technology in Pasadena, who was not involved in the study. He thinks the evidence suggests the event was shallower than it would have been without human intervention, and therefore more destructive.

Quicker release

Avouac agrees that stress in the earth's crust has to be released one way or another. But he says human activity – like water extraction – can cause the stress to be released quickly, rather than dissipating slowly over time.

"It's not just that you're advancing an earthquake that would have happened anyway. It's that you're creating more or larger earthquakes," he says.

A key part of predicting and possibly even controlling earthquakes is understanding what triggers them, Avouac adds. In most cases, pinning that down precisely is very hard, but the possibility that human activity is implicated in some events provides new opportunities for investigation.

A distant dream, Avouac says, is to tame natural faults by breaking them up and so decrease the magnitude of individual quakes and the size of the area they affect. It may also be possible to purposely trigger quakes to release tectonic pressures in a controlled way.

According to González, a more realistic approach is simply to avoid triggering seismic activity.

Unconventional oil and gas production boosts U.S. rank

Dallas Morning News, The (TX) - Tuesday, October 30, 2012

Author: JIM LANDERS

Last week, we published an Associated Press story that said the United States was on track to become the world's leading oil producer.

Well, it is, and it isn't.

The renaissance of the oil and gas patch helps explain why a boycott of Iran's oil exports is squeezing that nation without squeezing the global economy. Surging unconventional oil and gas production - spurred by the shale gas techniques of fracking and horizontal drilling - is creating hundreds of thousands of jobs and billions in tax revenue. It is giving U.S. manufacturers big advantages over the foreign competition.

Production is rising, and efficiency is driving down demand. But we're going to remain a major oil importer for at least the next several years. U.S. consumption is running at about 19 million barrels a day, with imports accounting for 41 percent of that amount.

Imports were 60 percent of U.S. consumption in 2005. To drive imports toward zero - which is the main idea behind energy independence - the technology of fueling transportation has to make more use of the "gas liquids" that are counted in the forecast of future American production.

The forecast showing the U.S. eclipsing the Saudis and the Russians comes from the U.S. Energy Information Administration, a branch of the Department of Energy. EIA shows "total oil supply" in the U.S. at the end of 2011 neck-and-neck with the Russians and closing in on the Saudis.

EIA's data shows the Saudis finished 2011 with an average of 11.153 million barrels a day of oil production. Production in the U.S. was 10.141 million barrels a day.

In terms of crude oil and condensate - what comes out of the ground in liquid form from an oil well - the U.S. is adding production at a healthy clip, with new resources from Texas leading the way. But that isn't close to production in Saudi Arabia or Russia, and it isn't likely to be in the future, either.

U.S. production this year is expected to average 6.3 million barrels a day, the best performance since 1993, and 2013 should see production at 6.9 million barrels a day.

The EIA's most optimistic numbers for crude oil production show the U.S. approaching 8 million barrels a day in 2020. Saudi Arabia is already above 10 million barrels a day, and President Vladimir Putin insists Russia will produce 10 million barrels a day for the next decade.

What makes the U.S. competitive on a volume basis with the Saudis are natural gas liquids, produced from gas wells, like butane, ethane and propane; biofuels like ethanol; and refinery processing gains. Add those to the mix, and the U.S. looks

set to surge into the lead.

Americans consume oil primarily for transportation. Butane, ethane and propane are used to create petrochemicals used in plastics, insulation and many other goods. Gas liquids production was 2.2 million barrels a day last year - up from 1.9 million barrels a day in 2009.

"The natural gas liquids story, at a high level, is predominantly about the manufacturing renaissance," said Ken Medlock, a senior energy fellow at the James A. Baker III Institute for Public Policy at Rice University. "It's not for the gas tank."

Biofuels - mostly corn-based ethanol, which now constitute 10 percent of U.S. gasoline - accounted for more than 900,000 barrels a day of U.S. "oil" production last year. They are expected to fall a bit this year as the ethanol industry argues for increasing the ethanol-in-gasoline blend to 15 percent.

Nobody produces refinery processing gains like the U.S. refining industry. After cooking oil with relatively cheap natural gas and distilling it into various products like gasoline, diesel and kerosene, U.S. refineries added 1.076 million barrels a day to oil production last year. Russian refineries had production gains of 15,000 barrels a day, and the Saudis got less than half that much.

Medlock argues the total picture, not just oil production, is what matters.

"You have to look at the whole thing to understand what this means," he said. "In raw crude oil production, the United States is No. 3. ... But it's not just about raw crude oil. It's also about product to the wheel, so to speak. If we can do things in the noncrude space, and limit what we import, that's a good thing. That can be biofuels, condensate, even natural gas liquids."

Follow Jim Landers on Twitter at @landersjim.

Fracking seminars set for Nov. at SMCC

Enterprise-Journal (McComb, MS) - Tuesday, October 30, 2012

Author: Randy Hammons Enterprise-Journal

Southwest Mississippi residents have the unique opportunity next month to learn first-hand what to expect should a shale oil boom materialize here as it has in other states, particularly North Dakota.

North Dakota Rep. Vicky Steiner will be part of a seminar at Southwest Mississippi Community College on Nov. 8 and 9 that will let residents and businesses in on the do's and don'ts when it comes to dealing with oil companies and hydraulic fracturing, or fracking. Steiner is executive director of the North Dakota Association of the Oil & Gas Producing Counties.

In southwest Mississippi, the boom would come from the Tuscaloosa Marine Shale oil deposits.

The "Thrive America: Leveraging the Energy Evolution" seminar is being organized by Wiggins resident Charlotte Batson, who owns Batson & Company. Batson has gathered information for area counties on the best practices of shale oil development in other regions of the country. Batson's marketing strategist, Amber Lombardo, is also working on the final details for the seminar, which will be on the third floor of the Horace Holmes student Union.

Batson returned last week from South Africa, where she was invited to speak at a shale oil conference and was interviewed by CNBC South Africa about how South Africa can manage its drilling.

Batson's Nov. 8 session concerns rights of landowners. The fee is \$95 for the conference and \$10 for a networking lunch. A VIP reception that night at The Caboose is \$45.

The Nov. 9 seminar is geared toward small business and entrepreneurs. The fee is \$145, along with \$10 for lunch.

Lombardo said Batson has the unique ability to simplify her discussions so the average person can understand.

"Charlotte is very good at translating the material into layman's terms. That is her niche market," Lombardo said. "The mission of the seminars is to help landowners be able to understand mineral rights documents when they receive them in the future and the legal documents that go along with them, such as a land lease. We'll talk about all the environmental impacts like water quality. Right now, the tendency for the oil companies is to pass along added costs for drilling on landowners' property. We want people to be aware of that and teach them how to manage it they've already signed a lease."

Thursday's session will be presented by Batson and D.W. Maxwell, president of Maxwell Energy in Brookhaven.

Lombardo said the business seminar will be just as informative, if not moreso.

"The focus shifts from the landowner to the small business owner," Lombardo said. "Friday we will have the heavy hitters in town. Along with Steiner, speakers include Barry Wilfhart, executive director of the Grand Forks N.D. Chamber of Commerce, Keith Lund, vice president of the Grand Forks Region Economic Development Corp., and Ken Becker, executive director of the Sweetwater (Texas) Enterprise for Economic Development Inc.

"North Dakota has experienced a tremendous oil boom over the last five years. Barry Wilfhart and Keith Lund will be coming in with their perspective on what they wished they had known five years ago," Lombardo said. "They will be able to share signs and symptoms of what was coming and how they wished they had prepared for what was coming. Ken Becker will talk about how small businesses can capitalize on supply chain opportunities."

According to the Fraser Institute, Global Petroleum's survey earlier this year showed all signs of a strong oil and gas market pointing toward Mississippi.

"What is most impressive is Mississippi is the second most favorable oil and gas market in the world," Lombardo said. "Mississippi is getting a lot of global attention in the investment environment. Clearly all the enthusiasm our delegation from North Dakota and south Texas demonstrates what all the chatter about oil and gas in Mississippi is about."

The seminars are a result of meetings over the summer in McComb, Liberty and Tylertown.

"There were so many questions from the communities during the meetings that we thought we needed a room later on to answer specific questions. That was the purpose of the meeting," Lombardo said. "What is coming up is a chance for residents to ask questions and conversation, instead of a one-way conversation."

Lombardo said Wilfhart and Lund developed a way to get information to people throughout Mississippi.

"Barry and Keith created a program where residents across the state can do business across the state," Lombardo said. "It's very important to get information into the hands of residents so they will be able to compete against people from out of town."

Hoeven, City, State Officials Cut Ribbon on DiverCity, New Housing Development For Energy Industry Workers - Senator's Empower States Act Ensures Ongoing Energy Development, Good Environmental Stewardship

Government Press Releases (USA) - Tuesday, October 30, 2012

GRAFTON, N.D. - Senator John Hoeven, company officials and state and city leaders today cut the ribbon on Diverse Energy Systems new employee housing development, DiverCity, located in Grafton. Diverse Energy Systems is an energy services company that builds and services systems from wellhead to pipeline for the oil and gas industry in the Bakken oil fields.

Hoeven this summer introduced the Empower States Act in the U.S. Senate. The legislation will give states primacy in regulating hydraulic fracturing to ensure ongoing oil and gas development with good environmental stewardship in the Bakken and elsewhere in the country. Hoeven said the bill takes a states-first approach because individual states are the first and most interested responders to oil and gas issues. States know their land, their geology and their water resources and have a primary responsibility to protect their environment and their citizens.

"What DiverCity represents, in real terms, is a growing company in a growing community in a growing state," Hoeven said. "It illustrates how creating a strong legal, tax and regulatory climate for businesses can create jobs, income and dynamic economic activity."

"We appreciate the work that Senator Hoeven is doing to create the kind of business environment for the energy industry that is helping businesses like Diverse to succeed," said Chet Erwin, CEO of Diverse Energy Systems. "That's the kind of approach that will enable us to continue growing and creating jobs in North Dakota and elsewhere."

The company was founded in February 2012 by Chet Erwin with the acquisition of Lean Technologies, a small fabrication shop in Grafton that employed 25 workers. The company is currently expanding operations with a field operations facility in Berthold and now employs a workforce of 75 employees at Grafton and 10 in Berthold, for a total of 85.

Diverse has a recruiting effort underway to raise employment to a total of 115 workers by February 2013 and 150 by this time next year. Revenue for Lean Technologies was approximately \$3 million a year; Diverse Energy Systems projects revenues to grow to \$25 million over a 12 month period.

The DiverCity housing project was prompted by the growing company's need to house its workforce of skilled employees. The housing development consists of 10 duplex units on 3.5 acres of land on the north side of the city. It is designed to provide transitional housing for new employees until they can secure more permanent housing.

Also attending the ceremony were Governor Jack Dalrymple, Diverse Energy Systems CEO Chet Erwin, Grafton Mayor Chris West, Grand Forks Region Economic Development Corporation President and CEO Klaus Thiessen, Miss North Dakota 2012 Rosie Sauvageau and Grafton High School Homecoming Queen Brooke Feltman.

Read this original document at: <http://www.hoeven.senate.gov/public/index.cfm/news-releases?ID=c88af44b-b8f9-4c89-ac63-3c550cc01814>

Idaho may set up new oil and gas regulation board

Lewiston Morning Tribune (ID) - Tuesday, October 30, 2012
associated Press

BOISE- Idaho may set up a new board to oversee its nascent oil and natural gas industry, a bid to put more knowledgeable people with fewer conflicts of interest in charge.

The Idaho Statesman reported the Department of Lands is drafting the proposal for the 2013 Legislature. Currently, members of the Idaho Land Board, including Gov. C.L. (Butch) Otter along with the attorney general, secretary of state, controller and public schools superintendent, regulate the industry.

A new board would include five members appointed by the governor, with each familiar with various aspects of the industry: oil and gas drilling, geology and water resources - as well as landowners with and without mineral leases of their own. The idea is to shift regulation from elected officials and put decision-making in the hands of people with deeper knowledge of the issues at stake.

The oil and gas industry is giving a tentative thumbs-up to the proposal - while withholding final judgment, based on what the legislation looks like when it emerges for public consideration.

"As always, the devil is in the details," said Suzanne Budge, executive director of the Idaho Petroleum Council.

Environmentalists who this year fought changes to laws governing the industry were initially receptive, too, as they claim that the existing system is rife with conflicts.

Justin Hayes, Idaho Conservation League program director, said the Idaho Land Board is often the steward of not only the endowment land, but the mineral rights beneath it.

The board's top priority under the Idaho Constitution to maximize return to the state for schools and other endowment land beneficiaries. Meanwhile, it not only writes the rules governing oil and gas drilling, but is also the final interpreter of them, Hayes said, setting up a situation where its members can't possibly make a decision without becoming tied in knots of competing interests.

"That's a four-way conflict," Hayes said.

Oil and gas is a small, relatively new industry in the state, where there's currently no commercial production from deposits discovered largely in the western part of the state. The latest auction of state lands for exploration - 1,900 acres in Payette and Washington counties, held in August - reaped only \$4,450, with just a single company bidding.

Still, with fears that hydraulic fracturing, or "fracking," that accompanies many such projects could damage the region's groundwater, the issue of regulating the industry has garnered attention that likely dwarfs the actual size of Idaho's potential gas production.

In the 2012 Legislature, Hayes' group helped spearhead energetic but ultimately unsuccessful efforts to defeat legislation that limited the ability of local governments to regulate oil and gas drilling projects.

Proponents argued Idaho was better off with a uniform set of policies that didn't differ from county to county, based on the local political environment. The changes passed after weeks of debate.

China completes shale bidding

UPI International Intelligence - Tuesday, October 30, 2012
Author: UPI News Service

The latest bidding round for exploration rights on 20 Chinese shale gas blocks attracted a record 83 companies, the Chinese Ministry of Land and Resources said.

The blocks total 7,723 square miles spread over eight Chinese provincial regions, Xinhua news agency reports. The auction is the second since June 2011, when six companies bid on four shale natural gas blocks.

China has 25.08 trillion cubic meters of exploitable onshore shale-gas reserves, the ministry has said. As part of its current 5-year economic plan, China aims to produce 6.5 billion cubic meters of shale gas a year by the end of 2015.

The ministry said the latest bidding was open to only to domestic companies or Chinese-held joint ventures with capital of more than \$48 million.

Companies that obtain winning bids -- to be announced after an evaluation process -- will be required to spend a minimum of \$4,807 annually on each square kilometer of shale gas blocks over a specified 3-year period and drill two wells on each 500 square kilometers within those blocks.

In a blueprint this year, the Chinese government had promised subsidies and supportive financial policies, including changing the entry criteria to include smaller companies so as to attract interest in its shale blocks from a wider range of companies, the Financial Times reports.

As the world's biggest consumer of energy, China hopes shale gas will provide a plentiful, cheap and clean new energy resource.

However, many of the companies in the latest bidding process -- including power utilities, real estate groups and a coal mining company -- have no experience in oil and gas.

To put it bluntly, it's like gambling, an executive of a private company involved in the bidding told the news portal NetEase Business.

Many of these companies have nothing to do with this industry ... Once they win the bid they can transfer (the right) or explore it with other qualified and capable companies. If they don't win they have nothing to lose, he said.

Meanwhile, Chinese energy companies have poured billions of dollars into U.S. shale-drilling projects in an effort to obtain technological knowledge on hydraulic fracturing and other drilling methods to develop China's shale reserves, experts say, Platts news service reports.

But those deals have been structured in such a way that China cannot appropriate those technologies.

Chinese companies certainly intended to acquire technologies in the U.S. through equity investment, but the problem is that these arrangements have embedded firewalls installed, Bo Kong, an energy expert at Johns Hopkins University's School of Advanced International Studies in Washington, was quoted as saying by Platts.

The Washington Daybook - General News Events - ++ Delete - 12:15 p.m. Science - Discussion NDN
Washington Day Book (DC) - Tuesday, October 30, 2012
TOPIC/SUBJECT: holds a discussion on " Hydraulic Fracturing : Challenges and Opportunities."

PARTICIPANTS: Mark Zoback, professor of earth science and geophysics at Stanford University; Melanie Kenderdine, executive director of the MIT University Energy Initiative; Greg Staple, CEO of the American Clean Skies Foundation; Amy Mall, senior adviser at Natural Resources Defense Council; and Kyle Simpson, senior energy adviser for Hogan Lovells LLC

DATE: October 31, 2012
LOCATION: NDN, 729 15th Street NW, 1st Floor, Washington, D.C.
202-544-9200 [Note: No new date announced.]

Potpourri

Charleston Gazette (WV) - Monday, October 29, 2012

Author: Gzedit

THE Marcellus Shale gas boom is boosting West Virginia - but it's a calamity for big-money investors, a New York Times analysis says. Slick-talking financiers induced wealthy interests to pour hundreds of billions into deep " fracking " wells around America, the national newspaper says - but so much gas flowed that gas prices fell by half, and drilling firms now operate at a loss. This slump was among reasons why Aubrey McClendon was forced out as chairman of Chesapeake

Energy. Meanwhile, the glut of cheap gas is clobbering West Virginia's coal industry, which can't compete against the low-cost fuel.

EAGLE FORD; State should share costs for road wear

San Antonio Express-News (TX) - Monday, October 29, 2012

The burst of drilling activity in the Eagle Ford Shale may have an economic impact on the state for decades to come. Right now, it's taking a toll on rural roads in the Eagle Ford area and the drivers who use them. The state should move swiftly to help keep those roadways safe.

In her certification of state revenue for 2012 and 2013, State Comptroller Susan Combs noted severance tax revenues on oil and gas production have increased sharply due to activity in the Eagle Ford Shale formation. That revenue stream is dedicated to the state's Rainy Day Fund and the Permanent University Fund. A portion of these revenues should also be dedicated to repairing and upgrading state and county roads that were never engineered to bear heavy truck traffic yet now serve as the transportation network for the Eagle Ford Shale play.

Express-News staff writer Jennifer Hiller reported that over its lifetime, one well using hydraulic fracturing - the innovation that has opened up the Eagle Ford formation - will require 2,000 loaded trucks to service it. Based on information from the Texas Department of Transportation, those trucks will have an impact equivalent to more than 17 million cars. There are 4,397 permits for wells in the Eagle Ford Shale.

A study commissioned by DeWitt County, southwest of San Antonio, found that county roads needed \$400 million in repair work attributable to heavy trucks servicing Eagle Ford drilling operations. That dwarfs the additional \$3.6 million in property taxes the county will collect as a result of increased property valuations. County Judge Daryl Fowler told the newspaper that during the six-month period from March through August, the state collected an estimated \$71 million in severance taxes from DeWitt County.

Businesses that are profiting from the Eagle Ford boom have worked out voluntary agreements with counties to repair roads. They already pay sales taxes. Counties in the Eagle Ford Shale, many of which now have the luxury of lowering property tax rates while still enjoying increases in revenue, need to do their part.

The state, however, is enjoying the lion's share of the tax receipts from the Eagle Ford. Residents of these counties are paying a price, both in damage to vehicles and accidents caused by unsafe road conditions. Lawmakers should earmark some of the severance tax revenues to maintain the roads that are making this economic boom possible.

VIDEO Fracking supporters 'Real People, Real Jobs' release video

Record, The (Troy, NY) - Sunday, October 28, 2012

Author: Staff Writer

ALBANY — Supporters of safe and responsible natural gas development have launched a new campaign to educate New Yorkers and set the record straight about hydraulic fracturing and the thousands of jobs it will generate throughout the Marcellus Shale.

Organizers of the "Real People, Real Jobs" rally in Albany earlier this month organized the campaign. The rally brought farmers, landowners, small business advocates, laborers and industry together in a strong show of support for lifting the state moratorium on high volume hydraulic fracturing .

"We remain confident that the state will make the right decision, but we want to make sure Albany leaders know the people of the Southern Tier and throughout the Marcellus Shale want to move forward as soon as feasible," said Susan Dorsey, a landowner and mother of seven from Chenango County. "New York can create good jobs that will save farms, keep families together and lift entire communities because that is exactly what has happened in Pennsylvania and other parts of the country."

Chris Musser, a small business owner from Vestal, N.Y., said, "We will continue to do everything we can to set the record straight so people understand the truth about the real benefits of natural gas development. This campaign takes the message we delivered in Albany at the rally and makes sure everyone in the New York Marcellus Shale region gets it."

The campaign includes a television advertisement that will run on broadcast and cable in the Binghamton and Elmira media markets, starting today and running into early November. In addition, supporters have logged more than 102,000 calls into residents throughout the Southern Tier and visited more than 30,000 homes.

"Natural gas development offers not just jobs for the people of the Southern Tier, but could also help bring down utility rates for the people of New York," said Karen Moreau, executive director of the New York State Petroleum Council, which is a division of the American Petroleum Institute. "All of this development relies on hydraulic fracturing , which offers a safe

and proven way to create jobs while responsibly protecting land, water and public health."

API is a national trade association that represents all segments of America's technology-driven oil and natural gas industry. Its more than 500 members – including large integrated companies, exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms – provide most of the nation's energy.

The industry also supports 9.2 million U.S. jobs and 7.7 percent of the U.S. economy, delivers \$86 million a day in revenue to our government, and, since 2000, has invested over \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives.

The fuel's reduced cost affects plans for the Crystal River and Levy plants.

NATURAL GAS COMPLICATES DUKE'S NUCLEAR AMBITIONS

Tampa Bay Times (FL) - Sunday, October 28, 2012

Author: IVAN PENN, Times Staff Writer

Duke Energy will update Florida regulators Tuesday on the status of the broken Crystal River nuclear plant and a report that says it could cost up to \$3.5 billion to fix.

The real issue, though, is much bigger: whether the company has any nuclear future in Florida at all.

Duke acknowledged as much at a nuclear industry conference last week.

"Nuclear development is facing the perfect storm," said Duke vice president Chris Fallon, speaking to a gathering of nuclear industry leaders. Natural gas prices are at historic lows, federal regulators have put a moratorium on new nuclear projects for at least two years and power demand is down.

The extended economic recovery, low population growth and greater energy efficiency are expected to slow the rate of growth in electricity demand over the next 20 years, according to the U.S. Energy Information Administration.

While Fallon said he believes it is important to have nuclear power as part of the energy mix throughout the utility's service territory, he acknowledged that low natural gas prices and high-priced nuclear construction have stifled new nuclear development.

"It's very hard to justify a (nuclear) project," Fallon said. "That's making it very challenging for us."

In Florida, Duke is weighing two nuclear power issues: whether to repair or close Crystal River and whether to build two new reactors in Levy County for \$24 billion, which could drive up the average customers' bill by hundreds of dollars a year.

Should it do both? Can it - and its customers - afford to do either?

Utilities nationwide face similar questions, showing what a difference a year makes. At last year's Nuclear Construction Summit, the industry readied itself for a "nuclear renaissance," marked by regulatory approval of the first two new nuclear plants in 30 years.

Now nuclear renaissance has become nuclear retreat.

What changed?

An enormous supply of natural gas in the United States - accessible now thanks to breakthroughs in drilling technologies - caused prices to fall to historic lows, making gas plants competitive to operate.

"No one would have imagined the gas phenomenon," Mark Marano, senior vice president of business development for Areva, a nuclear power developer, told the summit.

"Nuclear is going to be there," Marano said. "The question is: What form or shape will it be in? The economics are truly hitting home."

The impact of natural gas has proved so overwhelming that Virginia-based Dominion Resources Inc. announced last week that it would shutter an existing nuclear plant. The utility said no one would buy it when the company offered it for sale.

For Duke Energy, which acquired Progress Energy Florida in a merger that closed in July, the fate of Crystal River is

deeply affected by the dramatic change in economic reality. Low demand and cheap natural gas have made it difficult to justify spending billions of dollars to repair a 36-year-old nuclear plant - in particular when there's a risk the repair might fail.

According to Duke, the low natural gas prices are not entirely a good thing: Without Crystal River, Fallon told the summit, 76 percent of Duke's Florida energy production would come from natural gas.

Such dependence on a single source could send customers' bills soaring if natural gas prices spike.

"That's a big concern," said Charles Rehwinkel, deputy state public counsel, who represents consumers before the Public Service Commission. "I think that's probably the biggest thing keeping Progress looking at the repair of Crystal River."

The Crystal River nuclear plant broke during a maintenance and upgrade project three years ago. As workers cut into the nuclear reactor's 42-inch-thick concrete containment to replace old steam generators, the building cracked. An attempt to repair the first crack resulted in more cracks.

Before the merger with Progress Energy, Duke commissioned its own independent review of the troubles at Crystal River and concluded that while the building could be repaired, it would cost \$1.5 billion to \$3.5 billion plus \$300 million a year for as long as seven years for replacement power while the plant sits idle.

If Duke successfully repairs the plant and the Nuclear Regulatory Commission clears it for safe electricity generation, Crystal River could produce low-cost clean energy for 20 more years. Nuclear fuel is cheap compared to natural gas.

By comparison, the construction of a new natural gas plant would cost about \$1 billion and take 18 months. The natural gas plant would last 30 years, but would require a steady stream of fuel to keep it going. As Rehwinkel noted, the price of natural gas can be volatile.

In 2008, natural gas prices exceeded \$13 per million BTU. Prices dropped below \$2 in June of this year. The price now is above \$3 but is expected to fall in coming months. Because of environmental concerns about new drilling process (called hydraulic fracturing, or fracking), prices could see a significant uptick if government regulations tighten.

"You've got risk in there," economist Robert Graber told the nuclear summit. "Once you build those natural gas plants, you're at the mercy of those markets."

Graber said one state, Vermont, has already banned fracking and several other states are considering bans or tighter regulation.

Part of the equation in Duke's analysis involves the likelihood that Crystal River's insurer will help cover the cost of repairs. The utility and its insurer, the Nuclear Electric Insurance Limited, are expected to begin nonbinding mediation over payment next month.

At Tuesday's PSC hearing, a key question will focus on what it will cost customers to meet their energy needs - with or without nuclear.

Ivan Penn can be reached at ipenn@tampabay.com or (727) 892-2332.

FAST FACTS Up next

The state Public Service Commission will hold a status update meeting with Duke Energy about the broken Crystal River nuclear plant at 9:30 a.m. Tuesday at the Betty Easley Conference Center, Joseph P. Cresse Hearing Room (Room 148) 4075 Esplanade Way, Tallahassee.

Poll: Hydrofracking Support Inches Up in NY

USA TODAY (Arlington, VA) - Friday, October 26, 2012

Author: (C) Gannett News Service

By Jon Campbell, Albany Bureau

ALBANY -- Support for hydraulic fracturing is inching up among New York's voters, according to a new poll released Friday.

According to the Siena College survey, 42 percent of likely state voters support allowing hydrofracking for natural gas to

move forward in "parts of upstate New York." That's compared to 36 percent who are opposed.

Upstate voters, however, remain split on the much-debated technique used to help extract gas from gas-rich shale formations, with 43 percent in favor and 41 percent opposed.

The new poll represents the first budge in Siena's polling on hydrofracking in several months. In August, 39 percent wanted fracking to move forward with 38 percent opposed, which was virtually unchanged from May.

"While it's not a groundswell of support, more voters now support (the state Department of Environmental Conservation) moving forward on hydrofracking than in any previous Siena poll," Siena pollster Steve Greenberg said in a statement. "In August, a plurality of upstate voters and women had opposed fracking, and now small pluralities of both are in support."

Permits for high-volume hydrofracking have been on hold in New York while the DEC completes an environmental review and guidelines for the industrial process. State officials have offered no timeline on when that review may be completed, but ordered the Department of Health last month to assess the DEC's review before moving forward.

The Siena poll, which was conducted between Oct. 22 and 24, also found strong support for President Barack Obama and Sen. Kirsten Gillibrand, both Democrats facing re-election next month.

Obama is carrying a 59-35 percent lead over Republican challenger Mitt Romney in New York, according to the survey. Gillibrand, meanwhile, has a 43-point lead over GOP candidate Wendy Long.

"The last time a Republican presidential candidate carried New York was 1984 and that streak of 28 years appears to be in no jeopardy this year," Greenberg said.

Siena polled 750 registered voters in New York. The survey holds a margin of error of 3.6 percentage points.

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PETITION SEEKS FRACKING MIXTURE

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Author: RICK KARLIN

In a national turn in the debate over the natural gas drilling technique known as hydrofracking, a consortium of environmental groups has petitioned the federal Environmental Protection Agency to include gas drillers and developers on the list of industries required to participate in the Toxics Release Inventory.

Dating to 1986, the TRI program requires annual public reporting on the toxic pollutants that industrial sites emit each year. The disclosures are currently required of facilities such as chemical plants, power stations and refineries -- but not to producers of natural gas.

In the Capitol Region, the Lafarge concrete plant, the Norlite incinerator in Cohoes and various GE plants are among those subject to its provisions.

Supporters of the petition note that TRI laws neither prevent nor regulate the release of pollutants, but merely provide the public with information. And while gas drillers are exempt from TRI, the signatories note that harmful chemicals such as benzene and hydrogen sulfide are used or can be vented in hydrofracking.

"Why shouldn't oil and gas companies be required to report these toxic releases under our right-to-know laws, like so many other industries already do?" said Eric Schaeffer, executive director of the Washington, D.C.-based Environmental Integrity Project, which is led the effort to petition the EPA.

The petitioners also maintain that recent increases in natural gas production, along with the growth of hydrofracking, warrants another look at the TRI.

While high-volume hydrofracking isn't currently allowed in New York, the request amounts to "messaging exercise" against the technique, said John Krohn of Energy in Depth, which promotes the gas drilling industry.

He noted that the EPA already has the authority to make drillers enroll in the registry but hasn't done so. That list is made up predominantly of heavy industrial sites, although it includes some mining operations.

Gas wells, by contrast, are relatively small and emit low levels of chemicals, said Krohn.

"EPA has looked at this a number of times, under both Democratic and Republican administrations, and come to the conclusion that TRI wasn't built for this purpose. An oil and gas well isn't a massive industrial facility," said Krohn.

James Smith, spokesman for the New York Independent Oil and Gas Association, added that the chemical mixes that hydrofrackers use are proprietary. However, he said that under proposed state hydrofracking regulations the chemicals used in the process would have to be reported to the Department of Environmental Conservation.

The DEC has been mulling regulations for high volume horizontal hydrofracking , in which drillers use pressure, sand, water and chemicals to free gas deposits trapped deep underground. The DEC recently asked the state Health Department to study its assessment of health effects of the process.

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